

In the claims: Please amend the claims as indicated.

1. (Previously presented) A method for use by a feedback-signal-transmitting entity (12) in indicating to a feedback-signal-receiving entity (14) during a current time interval one or another state (signaling active state, discontinuous transmitting (DTX) state) in a plurality of different possible states (signaling active state, DTX state) in any one of which the feedback-signal-transmitting entity (12) can exist in any time interval in which the feedback-signal-transmitting entity (12) either signals all or part of a payload message to the feedback-signal-receiving entity (14) or instead operates in discontinuous mode, wherein the payload message is sent in response to a packet previously transmitted by the feedback-signal-receiving entity (14) and conveys feedback indicating whether the packet was successfully received, is transmitted in a predefined offset of one or more time intervals from the current time interval, and comprises a sequence of payload message symbols selected from a set of possible payload message symbols, the method characterized in that it comprises:

a step in which in order to indicate whether the payload message is being or was transmitted in a predefined positive or negative offset of one or more time intervals from the current time interval, the feedback-signal-transmitting entity (12) additionally signals in the current time interval an indication symbol selected from a set of possible indication symbols, and providing preamble or postamble signalling;

and further characterized in that the indication symbol differs from each of the possible payload message symbols, and in that the indication symbol is sent either in advance of or after the payload message.

2. (Previously presented) A method as in claim 1, wherein the indication symbol is selected based on when the time interval in which the payload is sent or was sent occurs compared to the current time interval.

3. (Previously presented) A method as in claim 1, wherein the payload message provided by the feedback-signal-transmitting entity (12) is provided on a feedback channel as feedback to the feedback-signal-receiving entity (14) for data transmitted over a data-transmission channel by the feedback-signal-receiving entity (14), wherein in response to receiving and successfully decoding a data signal provided by the feedback-signal-receiving entity (14), the feedback-signal-transmitting entity (12) provides to the feedback-signal-receiving entity (14) a corresponding acknowledgement message (ACK/NACK) in one of the sequences of time intervals corresponding to the time of receipt of the data signal in a predetermined way:

further characterized in that in the step of providing the indication symbol, the feedback-signal-transmitting entity (12) provides as the indication symbol a preamble symbol in the current time interval if an acknowledgement message (ACK/NACK) is to be sent in the next time interval but not in the current time interval.

4. (Original) A method as in claim 3, further characterized in that: a signaling cycle related to the previous, current or next time interval in the feedback channel is adapted according to a minimum applicable interval either in the data-transmission channel or in the feedback channel, whichever minimum applicable interval is higher.

5. (Previously presented) The method of claim 3, further characterized in that if neither an acknowledgement message nor a preamble symbol is to be sent in the current time interval, and an

acknowledgement message was sent in the previous time interval, then a step is performed in which the feedback-signal-transmitting entity (12) provides as the indication symbol at least one postamble symbol in one or more respective consecutive time intervals prior to the feedback-signal-transmitting entity (12) entering a mode in which it does not transmit on the feedback channel.

6. (Original) A method as in claim 5, further characterized in that: a signaling cycle related to the previous, current or next time interval in the feedback channel is adapted according to a minimum applicable interval either in the data-transmission channel or in the feedback channel, whichever minimum applicable interval is higher.

7. (Previously presented) The method of claim 5, further characterized in that in the step in which the feedback-signal-transmitting entity (12) provides at least one postamble symbol, the feedback-signal-transmitting entity (12) provides two consecutive postamble symbols as the indication symbol and a second indication symbol, if neither a preamble symbol nor an acknowledgement message (ACK/NACK) is to be sent in either the current time interval or the next time interval, and acknowledgement messages (ACK/NACK) were sent in the two immediately preceding time intervals.

8. (Previously presented) A feedback-signal-transmitting entity (12), characterized in that it is operative according to the method of claim 1.

9. (Previously presented) A feedback-signal-transmitting entity (12), characterized in that it is operative according to the method of claim 2.

10. (Previously presented) A feedback-signal-transmitting entity (12), characterized in that it is operative according to the method of claim 3.

11. (Previously presented) A feedback-signal-transmitting entity (12), characterized in that it is operative according to the method of claim 4.

12. (Previously presented) A feedback-signal-transmitting entity (12), characterized in that it is operative according to the method of claim 5.

13. (Previously presented) A feedback-signal-transmitting entity (12), characterized in that it is operative according to the method of claim 6.

14. (Previously presented) A feedback-signal-transmitting entity (12), characterized in that it is operative according to the method of claim 7.

15. (Previously presented) A telecommunication system, including a feedback-signal-transmitting entity (12) and a feedback-signal-receiving entity (14), characterized in that the feedback-signal-transmitting entity (12) is operative according to the method of claim 1, and the feedback-signal-receiving entity (14) uses the preamble and postamble signalling to determine the current state of the signal-transmitting entity (12) from among the plurality of different possible states (signalling active states, DTX state).

16. (Previously presented) A telecommunication system, including a feedback-signal-transmitting entity (12) and a feedback-signal-receiving entity (14), characterized in that the feedback-signal-

transmitting entity (12) is operative according to the method of claim 2, and the feedback-signal-receiving entity (14) uses the preamble and postamble signalling to determine the current state of the feedback-signal-transmitting entity (12) from among the plurality of different possible states (signalling active states, DTX state).

17. (Previously presented) A telecommunication system, including a feedback-signal-transmitting entity (12) and a feedback-signal-receiving entity (14), characterized in that the feedback-signal-transmitting entity (12) is operative according to the method of claim 3, and the feedback-signal-receiving entity (14) uses the preamble and postamble signalling to determine the current state of the feedback-signal-transmitting entity (12) from among the plurality of different possible states (signalling active states, DTX state).

18. (Previously presented) A telecommunication system, including a feedback-signal-transmitting entity (12) and a feedback-signal-receiving entity (14), characterized in that the feedback-signal-transmitting entity (12) is operative according to the method of claim 5, and the feedback-signal-receiving entity (14) uses the preamble and postamble signalling to determine the current state of the feedback-signal-transmitting entity (12) from among the plurality of different possible states (signalling active states, DTX state).

19. (Previously presented) A telecommunication system, including a feedback-signal-transmitting entity (12) and a feedback-signal-receiving entity (14), characterized in that the feedback-signal-transmitting entity (12) is operative according to the method of claim 6, and the feedback-signal-receiving entity (14) uses the

preamble and postamble signalling to determine the current state of the feedback-signal-transmitting entity (12) from among the plurality of different possible states (signalling active states, DTX state).

20. (Previously presented) A telecommunication system, including a feedback-signal-transmitting entity (12) and a feedback-signal-receiving entity (14), characterized in that the feedback-signal-transmitting entity (12) is operative according to the method of claim 7, and the feedback-signal-receiving entity (14) uses the preamble and postamble signalling to determine the current state of the feedback-signal-transmitting entity (12) from among the plurality of different possible states (signalling active states, DTX state).

21. (Previously presented) A method as in claim 1, wherein the payload message symbols include an ACK and a NACK symbol, and the possible indication symbols include either at least a preamble symbol or a postamble symbol, and further wherein the payload message symbols and the possible indication symbols are each different sequences of a same predetermined size.

22. (Previously presented) A method as in claim 21, wherein the payload message symbols and the possible indication symbols each include a bi-orthogonal code set.

23. (Previously presented) A method as in claim 22, wherein the payload message symbols and the possible indication symbols each include some bits making up the bi-orthogonal code set and additional bits, and the additional bits of each symbol besides the ACK symbol are opposite in polarity to the corresponding bits in the ACK symbol.

24. (Previously presented) A method as in claim 22, wherein the possible indication symbols include both a preamble symbol and a postamble symbol, and the payload message symbols and the preamble and postamble symbols are as follows:

ACK:	+1	<u>+1</u>	<u>+1</u>	+1	<u>+1</u>	<u>+1</u>	+1	<u>+1</u>	<u>+1</u>	+1
NACK:	-1	<u>-1</u>	<u>-1</u>	-1	<u>-1</u>	<u>-1</u>	-1	<u>-1</u>	<u>-1</u>	-1
Preamble:	-1	<u>-1</u>	<u>+1</u>	-1	<u>-1</u>	<u>+1</u>	-1	<u>-1</u>	<u>+1</u>	-1
Postamble:	-1	<u>+1</u>	<u>-1</u>	-1	<u>+1</u>	<u>-1</u>	-1	<u>+1</u>	<u>-1</u>	-1

whereby the ACK, NACK, preamble and postamble symbols therefore each include three-times repeated pairs of bit sets each making up a bi-orthogonal code set and the remaining four bits of each symbol besides the ACK symbol are opposite in polarity to the corresponding bits in the ACK symbol.

25. (Previously presented) A method, comprising:

a step in which a feedback-signal-transmitting entity (12) receives a packet transmission from a feedback-signal-receiving entity (14); and

a step in which, in response to the packet transmission, the feedback-signal-transmitting entity (12) signals in a current time interval an indication symbol selected from a set of possible indication symbols, and providing preamble or postamble signalling in order to indicate whether a payload message providing feedback to the packet transmission is being or was transmitted in a predefined positive or negative offset of one or more time intervals from the current time interval;

wherein the payload message includes one or another of various possible payload message symbols and the indication symbol differs

from each of the possible payload message symbols, and is sent either in advance of or after the payload message.

26. (Previously presented) A method as in claim 25, wherein the payload message provided by the feedback-signal-transmitting entity (12) is provided on a feedback channel as feedback to the feedback-signal-receiving entity (14) for data transmitted over a data-transmission channel by the feedback-signal-receiving entity (14), wherein in response to receiving and successfully decoding a data signal received at a time of receipt and provided by the feedback-signal-receiving entity (14), the feedback-signal-transmitting entity (12) provides to the feedback-signal-receiving entity (14) a corresponding acknowledgement message (ACK/NACK) in one of the sequences of time intervals corresponding to the time of receipt of the data signal in a predetermined way:

wherein in the step in which the indication symbol is provided, the feedback-signal-transmitting entity (12) provides as the indication symbol a preamble symbol in the current time interval if an acknowledgement message (ACK/NACK) is to be sent in the next time interval but not in the current time interval.

27. (Previously presented) A method as in claim 25, wherein the payload message symbols include an ACK and a NACK symbol, and the possible indication symbols include either at least a preamble symbol or a postamble symbol, and further wherein the payload message symbols and the possible indication symbols are each sequences of ten bits.

28. (Previously presented) A feedback-signal-transmitting apparatus (12), comprising:

means for receiving a packet transmission from a packet-transmitting apparatus (14); and

means by which, in response to the packet transmission, the feedback-signal-transmitting apparatus (12) signals in a current time interval an indication symbol selected from a set of possible indication symbols, and providing preamble or postamble signalling in order to indicate whether a payload message providing feedback to the packet transmission is being or was transmitted in a predefined positive or negative offset of one or more time intervals from the current time interval;

wherein the payload message includes one or another of various possible payload message symbols and the indication symbol differs from each of the possible payload message symbols, and is sent either in advance of or after the payload message.

29. (Currently amended) A feedback-signal-transmitting apparatus (12) as in claim 28, wherein the payload message is provided by the feedback-signal-transmitting apparatus (12) on a feedback channel as feedback to the packet-transmitting apparatus (14) for data transmitted over a data-transmission channel by the packet-transmitting apparatus (14), wherein in response to receiving and successfully decoding a data signal provided by the packet-transmitting apparatus (14) and received at a time of receipt occurring in a time interval in a sequence of time intervals, the feedback-signal-transmitting apparatus (12) provides to the packet-transmitting apparatus (14) a corresponding acknowledgement message (ACK/NACK) in one of the sequences of time intervals corresponding to the time of receipt of the data signal in a predetermined way, and

wherein the means by which the indication symbol is provided provides as the indication symbol a preamble symbol in the current time interval if an acknowledgement message (ACK/NACK) is to be sent in the next time interval but not in the current time interval.

30. (Previously presented) A feedback-signal-transmitting apparatus (12) as in claim 28, wherein the payload message symbols include an ACK and a NACK symbol, and the possible indication symbols include either at least a preamble symbol or a postamble symbol, and further wherein the payload message symbols and the possible indication symbols are each sequences of ten bits.

31. (Previously presented) A user equipment (UE) device including a feedback-signal-transmitting apparatus (12) as in claim 28.

32. (Previously presented) A radio access network element including a feedback-signal-transmitting apparatus (12) as in claim 28.

33. (Previously presented) A Node B of a radio access network including a feedback-signal-transmitting apparatus (12) as in claim 28.

34. (Previously presented) A telecommunication system, including a packet-transmitting apparatus (14) for providing a packet transmission and a feedback-signal-transmitting apparatus (12) as in claim 28 for providing a payload message and the indication symbol in response to the packet transmission.

35. (Previously presented) A method, comprising:

a step in which a signaling entity (12) transmits to a signal-receiving entity (14) in a current time interval a payload message including one or more payload symbols from a set of possible payload symbols for indicating signaling information, according to a first predetermined procedure; and

a step in which the signaling entity (12) operates according to a second predetermined procedure if no payload message is transmitted in the current time interval;

wherein the second predetermined procedure includes transmitting one or more indication symbols each differing from each of the possible payload symbols.

36. (Previously presented) A method as in claim 35, wherein the one or more indication symbols are transmitted on the same communication channel as the payload symbols.

37. (Previously presented) A method as in claim 35, wherein in the first predetermined procedure the payload symbols are selected from a predetermined set of two different possible payload symbols.

38. (Currently amended) A method as in claim 35, wherein the payload ~~message~~-symbols and the one or more indication symbols are each sequences of equal ~~number~~-numbers of bits, and wherein at least one of the payload ~~message~~-symbols is further separated in code distance from the one or more indication symbols than any of the other payload ~~message~~-symbols.

39. (Previously presented) A signaling entity (12) operative according to the method of claim 35.

40. (Previously presented) A telecommunication system, including a signalling entity (12) as in claim 39 and a signal-receiving entity (14), wherein the signal-receiving entity (14) is adapted to receive the one or more indication symbols and to use the received one or more indication symbols to determine the current state of the signalling entity (12) from among a plurality of different possible signaling states (signaling active states, DTX state).